while the pressure had risen to 29.72. On the morning of the 11th the storm lay off Manzanillo, where it gave locally heavy rains to some of the coast towns, but no later report concerning it is yet available. It is interesting to note in connection with this storm that a disturbance appeared over the northwestern part of the Gulf of Mexico on the afternoon of the 12th.

On the 15th a northeast gale of force 8 was experienced by the British steamer *Toco*, in 17° 15′ N., 107° W., accompanied by only a slight depression of the barometer. On the 16th, 17th, 22d, and 23d gales of force 8 to 10 occurred over and south of the Gulf of Tehuantepec, but these were not accompanied by barometric disturbances. Observers of the whole northeast gales of the 16th and 17th report that they began and ended suddenly, their onset being accompanied by heavy rain squalls, which shortly cleared, so that generally fair weather prevailed during the remainder of the blow.

Fog was little observed in west longitudes this month, except along the American coast north of the 30th parallel. West of the 180th meridian scattered observances of fog were recorded on eight days.

WATERSPOUT ON THE SOUTH PACIFIC OCEAN

Mr. J. V. Bray, second officer of the British motor ship *Aorangi*, Capt. R. Crawford, Sydney, Australia, toward Honolulu, gives the following account of a waterspout observed November 1, 1925, in 5° 42′ S., 172° 39′ W.:

When first observed at 7 a. m. by senior second and fourth officers, waterspout appeared descending from a white cumulus cloud and revolving in a counterclockwise direction. The phenomenon disappeared about 20 minutes after first observed, and about half way down during descent the spout could be plainly seen to take a sharp turn almost at right angles, curving around a small cumulus cloud underneath; also spray, distinctly white, to be seen rushing up the spout. When abeam it lifted and disappeared. The whole aspect was white—ascending spray and descending cloud. The clouds were of a clearly defined cumulus type. Other observers state that before final descent the spout thinned and could be seen through. Distance of spout, 2½ miles; estimated height, 3,000 feet. Sky clear, one-fifth clouded by tumulus. Wind ENE. 1. Temperature 83°.—*W. E. H.*

TWO TYPHOONS OVER THE PACIFIC AND ONE DEPRESSION OVER THE PHILIPPINES IN NOVEMBER, 1925

By Rev. José Coronas, S. J.

[Weather Bureau, Manila, P. I.]

The first Pacific typhoon had appeared already in our weather maps, on the 24th of the last month of October, near 145° or 146° longitude E. and 9° latitude N. It moved first WNW., passing about 100 miles to the north of Yap in the afternoon of the 27th. On the 28th it began to move northwestward about 600 miles to the east of north Samar. The steamer *Comliebank*, on her way from San Francisco to Manila, was well under the influence of this typhoon on the 28th and 29th. On October 31, when the center was east of Balintang Channel near 127° longitude E. and 20° latitude N., there was a decided change of the direction to the N. and N. by E., the center being situated at 6 a. m. of November 1 to the south of Naha in about 25° latitude N. between 127° and 128° longitude E.; the barometric minimum in Naha was then 745.5 mm. (29.35 ins.) with strong winds from NE. The typhoon finished its recurving to ENE. on November 1, and filled up on the 2d between Japan and the Bonins.

The second Pacific typhoon was shown by our weather maps on October 31 over the western Carolines near 150° longitude E. and 8° latitude N. It moved NNW. on October 31, NW. and WNW. on November 1, and recurved to the N. and NE. on November 2 and 3. The center of the typhoon passed about 100 miles to the north of Yap in the afternoon of November 1. The recurving to the north took place near 138° longitude E. and 19° latitude N. Our maps showed the center to the southeast of the Bonins at 6 a. m. of the 4th near 145° longitude E. and 24° latitude N. moving NE. or NE. by E.

The depression which traversed the Philippines on the 9th of November appeared at 6 a. m. of the 6th to the SSE. of Yap near 140° longitude E. and 5° latitude N. After moving practically WNW. for over two days, it crossed the Visayan Islands on the 9th with an almost due west direction and an extraordinary rate of progress of nearly 19 miles per hour. The center reached the southern part of Indochina in the early morning of November 11.

ADDITIONAL NOTE ON TROPICAL CYCLONE OF OCTOBER 22–25, 1925, OFF WEST COAST OF MEXICO

By Charles C. Allen

[Weather Bureau Office, San Francisco, Calif., December 22, 1925]

During the latter part of October, 1925, a tropical storm of violent character appeared off the west coast of Mexico to the south of latitude 20° N., moving in a direction along the Panama-San Francisco steamer route until it turned inland near Cape Corrientes on the 24th–25th.

This disturbance, which has already been referred to in the Monthly Weather Review, for October, overtook several steamers in its progress along the coast. Capt. J. A. Mordue, of the British steamer *Kathlamba* has furnished a detailed and interesting report of his encounter with this cyclone.

On the night of October 22–23 it became evident that a storm from the south was overtaking the *Kathlamba*, the wind having changed during the night from light and variable to fresh easterly, accompanied by squalls. The barometer remained steady at 29.78 inches until noon of the 23d, after which hour the pressure fell steadily, and after 8 a. m. of the 24th quite rapidly (from 29.60 ins. at 8 a. m. to 28.57 ins. at noon), with the wind backing to the northeast and north, increasing to force 12. As the backing of the wind indicated that the center of the storm was moving upon the ship quite swiftly, and even then swerving to the eastward, Captain Mordue altered his course to the westward in hope of escaping the full violence of the storm. He succeeded in that one particular, but nevertheless experienced wind and sea of great fury. His own words tell graphically of the situation at the height of the storm, when in an estimated position at noon, October 24, of latitude 18° 53′ N., and longitude 106° 05′ W. At that time the wind was north, force 12, and the lowest pressure reading was 28.57 inches. His description, in part, reads:

During this time the wind was sweeping overhead. Canvas weather screens and dodgers and light awnings over the bridge and poop were torn from their fastenings and whirled away to leeward. One of the starboard boats was blown adrift from its chocks, and some idea of the force of the wind can be formed from the fact that the pressure on the steam whistle lanyard was sufficient to cause the whistle to sound full blast at frequent intervals.

The ship was swept by a continuous blinding smother of rain and spray through which the dim loom of the white painted foremast could just be discerned from the bridge—the limit of our vision forward, the forecastle head and all on it being completely obliterated.

After 1.30 p. m. (October 24) the barometer commenced to rise, although the wind held steady from the northwest for several hours, gradually falling to moderate westerly by the morning of the 25th.

The S. S. *City of Stockholm*, bound north and about 120 miles northwest by west of the *Kathlamba*, experienced very little of the hurricane's fury.

That part of Mexico in the path of the storm had rainfall on the 24th–25th, which was quite heavy at some coastal points.

DETAILS OF THE WEATHER IN THE UNITED STATES

GENERAL CONDITIONS

The month may be described as moderately cool and generally wet. An increase in the intensity of the general circulation was noticeable especially in the second decade when several deep barometric depressions moved from the Gulf of Mexico to the St. Lawrence Valley. An anticyclone that passed Midway Island in the Pacific on the 10th could be traced across the Pacific, the North American continent, and part of the Atlantic, where it merged with prevailing high pressure in that region on the 19th, after having traversed about one-third of the circumference of the globe.—*A. J. H.*

CYCLONES AND ANTICYCLONES

By W. P. DAY

Eighteen low-pressure areas were plotted, of which seven were of the Alberta type. The tracks of these seven were generally so far to the north that they had little direct effect on the weather in the United States and much of the real weather of the month was due to secondaries which formed over the Southwest. In fact, most of the Alberta LOWS were well shown at Fort Simpson, in the Mackenzie Valley before being picked up again along the line of Canadian stations; and pressure was continually below normal in Alaska and the Mackenzie Basin for about 12 days during the middle of the month. Several important storms developed over the Southwest and reached considerable intensity over the Lake region and the Northeastern States. On the last day of the month a tropical storm developed northwest of Cuba, crossed the Florida Peninsula with increasing intensity, reaching hurricane proportions off the northeast Florida coast and striking the coast again between Wilmington and Hatteras.

The more marked of the temperature depressions were due to Alberta HIGHS. These HIGHS were well shown at Fort Simpson and to some extent at Eagle, Alaska.

FREE-AIR SUMMARY

By L. T. SAMUELS

Free-air temperatures for the month averaged for the most part slightly below normal (Table 1). While the monthly departures did not vary greatly with increase in altitude, those for the upper levels at the northern and southern stations stand in rather marked contrast, being negative at the former and positive at the latter. Notwithstanding this deficiency in mean temperature, the relative humidities averaged generally below normal. This naturally resulted in negative departures in the mean vapor pressures for the month.

It will be seen in Table 2 that the resultant winds for the month based on kite observations differed but little from their normals. Those indicated by afternoon pilot-balloon observations, having been determined from a greater number of stations, show a pronounced westerly drift at the 3 km. level at all stations, including Key West.

Pilot-balloon observations from the 18th to the 21st showed a decidedly abnormal drift in the general circulation for this season. During this time practically the entire country was covered by a pronounced anticyclone which had moved inland over the North Pacific States and gradually spread southward and eastward until by the end of the period its southern border had invaded the tropics. This resulted in relatively low temperatures over an extended area in the lower latitudes, whereas low pressure attended by relatively high temperatures prevailed over the Canadian Provinces. The free-air temperature distribution during this period is strikingly shown in a comparison of the kite observations made at the four western aerological stations. These temperatures (°C.) are given in the following table, wherein the stations are arranged geographically.

Station	Date	Altitude (m.) m. s. l.				
		1,000	2,000	3,000	4,000	5,000
Ellendale	18	4.3	−1.8	−10.0		
Drexel	18	7.3	−0.7	−7.1		
Broken Arrow	18	9.6	2.8	−0.7		
Groesbeck	18	14.1	8.3	1.8		
Ellendale	19	5.9	1.7	−4.0	−8.3	−13.6
Drexel	19	3.9	−2.4	−7.0		
Broken Arrow	19	6.5	0.5	−6.8	−10.0	
Groesbeck	19	10.8	4.6			
Ellendale	20	12.4	7.6	2.9		
Drexel	20	9.8	6.7	2.1		
Broken Arrow	20	6.9				
Groesbeck	20	7.4	3.2			
Ellendale	21	−1.2	−5.7			
Drexel	21	11.6	5.0	−0.3		
Broken Arrow	21	9.8	6.0	1.0		
Groesbeck	21					

It is evident that the temperature reversal was most pronounced on the 20th, when it was 4.2° C. colder at 2,000 m. above the Texas station than at the same elevation over Ellendale, situated in the extreme northern part of the country.

The effect of this condition was temporarily to reverse the general pressure gradient aloft and thereby cause easterly winds in the upper levels. Some of those observed by pilot-balloon observations are shown in the following table.

Station	Date	Altitude (m.) m. s. l.								
		2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000
Broken Arrow	19	nnw. 14	n. 11	nne. 10	ne. 16	nne. 14				
Do	20	w. 3	w. 3	sw. 4	e. 4	ese. 4	ene. 8			
Do	21	wsw. 10	wsw. 8	s. 4	ene. 6					
Denver	18	e. 6	ne. 4							
Do	19	ssw. 2	n. 6	nne. 6	ne. 8	ne. 11	ene. 10	ene. 15	ne. 16	
Do	20	sse. 3	nw. 2	nnw. 2	nw. 2	wnw. 2	w. 1	nnw. 2	wnw. 2	se. 1
Do	21	nne. 3								
Drexel	19	nnw. 12	n. 12	n. 14	nne. 19	nne. 22				
Due West	21	nne. 6	nne. 1	nne. 3	n. 4	nw. 6	wnw. 6	w. 8	w. 8	w. 23
Groesbeck	20	nne. 11	ese. 8	wnw. 6	wnw. 11	wnw. 19	w. 26	w. 32	w. 35	w. 39
Washington	20	nw. 8	n. 8	nne. 10						

Several unusually pronounced temperature inversions and isothermal conditions were observed during the month. One of the latter occurred at Royal Center on